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P R O C E E D I N G S

(9:02 a.m.)

CHAIR FELLER: I think we are going to get started. Welcome, Everybody. Our first order of business is a science update from Cisco Werner. Over to you.

DR. WERNER: What did I just do?

CHAIR FELLER: It works. Does it work? Here we go.

DR. WERNER: Good morning. It's good to be here again. Sorry I had to miss part of the meetings earlier, yesterday and the day before. But I will talk a little bit about that because I was at meetings with one of our other line offices that had to do with how do we collaborate on some of the modeling work that we do jointly, so I will talk a little bit about that.

But what I wanted to give you an update on was to sort of follow from the conversation that we had in Portland last May -- April?

CHAIR FELLER: Something like that.

DR. WERNER: Something like that. And where we are on some of the activities that I

talked about then and some new things --

And that wasn't me. I was ready to go.

SPEAKER: I'm sorry, we lost the WebEx on the machine. Sorry about that.

DR. WERNER: All right. So we are back on. No problem. Thanks. As I said, I wanted to follow on from the conversation that we had last meeting, that we had in Portland and give you updates and see where we are going next.

And the topics, I wanted to talk about CAPAM. I will tell you a little bit about what CAPAM is, and give you an update on our saildrone activity and also some strategic initiatives that we've have taken on, which ones we funded and which ones we are actually going to do even though we are a little bit stretched in terms of being able to fully fund them.

And then some concluding thoughts on some challenges that each one of these brings to us.

So just to start off, you have seen this before, this is the Stock Assessment Improvement Plan, the SAIP. It's going to come out in print, finally, I think this year or

actually in the next few weeks or so.

And that -- remember, the SAIP is a document that follows on from a document that was written in like 2002. So this is like 16 years later that we got to the point where we figured that we needed to have a new strategy for how do we do stock assessments.

Enough had happened, both in technologies and in model development and such, that we wrote this document, I think you have seen the electronic versions of this, and had a chance to comment on them.

But included in this, it calls for the continual improvement of stock assessments, with new developments in both science and technology; and by that its instrument surveys and also the mathematical approaches that we take to that.

So that document sets the stage. And the things I will be talking about today are germane to what this document calls for.

So I will start off with CAPAM. And this is, I just kind of want to give a shout-out on CAPAM. And CAPAM stands for the Center for the Advancement of Population Assessment

Methodology.

It was, quote, "established" in 2012, and it received this Ricker Resource Conservation Award at the American Fisheries Society meeting that took place in Atlantic City up in New Jersey.

And it's a remarkable center, or set of activities that have happened, perhaps even under many people's radar.

But the idea of CAPAM -- and this again is germane to the Stock Assessment Improvement Plan -- it worked toward improving the methods that we use in our stock assessment models.

It's supposed to do two things. It's supposed to improve the quantitative methods and it also is supposed to make sure that these improvements are community-based, both in terms of community getting together and making these improvements as well as getting the information out.

And the leads are down there, Mark Maunder from the IATTC, Inter-American Tropical Tuna Commission. It's in San Diego. All three folks are in San Diego. Bryce Semmens at Scripps

and Paul Crone at the Southwest Fisheries Science Center.

And Bryce Semmens is a faculty member at Scripps, but it's someone that we in NOAA Fisheries, funded to establish that position in collaboration with the Scripps Institute of Oceanography.

So it's really a partnership that we do, both with our academic colleagues as well as with fisheries.

And even, I guess it's an inter-governmental, you know, the IATTC.

This award, this next slide, you know, it's, the citation says that it's advanced the state of science and communicated these advancements through the reviewed literature, et cetera, et cetera.

I had three bullets there that I highlighted from really high-level people in our field: Trevor Branch from the University of Washington, Doug Butterworth from South Africa, and Andre' Punt also from the University of Washington just saying how much this center has contributed to the advancements of the new

methods.

And really, that's really all I wanted to say. I just wanted to congratulate them and highlight, I wanted to start off with some positive news here in terms of our contributions to advancing methods not just in the United States but really globally.

It's something that I think we all are proud of. And II thought I would share that with you.

So I'm going to move to recommended actions also from the Stock Assessment Improvement Plan. And in this case I'm going to focus on the data collection and processing.

And this document calls for improvements in electronic and other advanced technologies, EM, ER, acoustics, optics, EDNA, et cetera, that we have talked in the past, the need to expand our industry partnerships, survey designs, survey calibration and data management access and standardization.

I will talk a little bit about those, some of which are updates from the Portland meeting.

The first thing I want to say that I talked about then was we were just beginning to launch that saildrone survey that was going to go from the northern tip of Vancouver Island to the Channel Islands in Southern California.

And that survey was successfully completed. It took over a hundred days and it was five saildrones, and the data is just beginning to be looked at right now.

Again, there is a zigzag that the saildrones took. The data was received just three weeks ago, and by data I mean this was the acoustic data that was collected from the saildrones as well as other environmental data that was collected, winds, temperatures, et cetera, et cetera, that folks are just beginning to look at right now.

I was hoping to have a little to show but at present, it's the first time they worked with this data so it's a little bit noisy and they need to figure out how to filter that noise and get it to a presentable form.

II hope that there will be a preliminary report at the end of this month but

the target is to have a final report by March for presentation to the PFMC at their April meeting.

So four drones are back in. The idea here is that they will hopefully provide enough information to help in the assessment of the hake, and also the Coastal Pelagic species, and that would be the sardine, tuna and others.

There is a fifth drone that's still in the water, and that's doing basically a back and forth. I think it's off Point Conception or something, where it's just doing a back and forth and are trying to measure the fish that are migrating, north, south, basically measuring how they go through this acoustic curtain that the saildrone is doing there.

And that one I think we will retrieve sometime in the spring. So that's a different way of using a saildrone, keeping it, just doing one line.

Yes, did you have a question, please?

MR. SCHUMACHER: Thanks, Cisco. George Schumacher, quick question.

How were the saildrones at sticking to the mission and running the transects properly?

DR. WERNER: Remarkable. Absolutely remarkable. So those lines that you see there, they are -- those are the planned lines. But you are able to follow them, I had gone to the website every so often, and it looked like it was ships, it was that straight back and forth. It's really something else.

The maneuverability of these saildrones is really remarkable.

They do it from land and they monitor them continuously. We don't drive them. These are driven by the actual saildrone folks.

And the saildrone model is that they will operate the instruments. They won't sell them to you, but they will sell you the data is what they are doing. They will give you the data, but they will work with you in terms of the survey designs and such. Anything goes wrong, they fix it and then they collect the data and they pass the data along to you.

Another question?

MR. BERKOWITZ: If this is deemed to be effective, Cisco, do you see this replacing traditional assessment methodology through some

of the trawl surveys now?

DR. WERNER: Yes. You beat me to it. At present, it's one-to-one in terms of cost. So right now, we are not getting a break in cost right now. So this survey that you see there, going from the northern tip of Vancouver Island to the Channel Islands, costs just about as much as a white ship survey.

MR. BERKOWITZ: Really.

DR. WERNER: Like with everything, if we put more of them in the water, if we use more of them, the price goes down. Who knows, maybe we can see.

But right now, the cost per day of a saildrone is $2500 per day of the saildrone.

So this survey costs almost a million dollars. That saildrone put on the table.

The way this worked, they said, "We will do this survey for you this year to see how it works," so they basically gave us a test drive, to call it that way, and now we are going to try to see what did we get out of it, and how do we use it.

But right now, it's one of the things I

do want to talk to you guys about. But it's not an immediate replacement of what we are doing.

We are thinking about -- I will take a detour here -- what we are thinking, for example, is as you have all heard, ships sometimes have mechanical problems and such. The Dyson up in Alaska had some issues this year, and the Bigelow a couple of years ago.

So it could be that they could come in and do the surveys when one of the white ships cannot. So it could be that they could do it that way.

But right now, the price point isn't quite favorable yet. And I will underscore the word yet. So -- yes?

MR. MOORE: Peter Moore. Thanks, Cisco. This is an acoustic survey?

DR. WERNER: The saildrone, let me see if -- yes. I don't have a good slide on it. But it is an acoustic survey. But the saildrone also has, as I said, it has temperature, salinity, wind, chlorophyll, but this is all surface right now.

All those measurements are surface

measurements. In the future the saildrone will have a yo-yo capability that they will be able to do some subsurface work. But no, it's more than just acoustics. But we wanted to see whether the acoustics we got from the saildrone is comparable to the white ship acoustics.

MR. MOORE: No larval survey at this time anyway, right?

DR. WERNER: That's one of the issues. The idea would be if we can mow the lawn, like we do here, and use the ship to do targeted samples for the biology. So there could be a combination of process oriented, if you will, or sample areas to get -- because we always have to have information on the size, condition, age of the fish; and this doesn't give us that at this point. That's correct. Yes.

Yes. Mike?

MR. OKONIEWSKI: Thank you. I have been following this for some time, but that was more or less my question is the biological side of it, especially the species composition.

If you are looking at what could be multiple different species sorting out which is

which, that you are looking at without just being able to recognize the acoustic signal itself.

And so I guess there is a point where I would like to know what you are thinking about.

DR. WERNER: Yes. It's a hugely important question. And, as you know, in San Diego, there is that -- the biotechnology tank and the idea would be to see if we could do exactly what you are saying is to look at acoustic signals and tell the difference between say a hake and a sardine or something.

And we know that's not easy, even for example to tell the difference between a hake and squid isn't that easy, to cause a problem, what was it, in 2011, or something like that, it looked like it was -- it was difficult to unravel the acoustic signal.

And so that is one of the big research questions in terms of how do we tell one from the other, just -- can we tell one species from another just based on acoustic signal. And I don't know if we can do that yet.

MR. OKONIEWSKI: I think it was 2009, and it was a major problem and they had to go

back and do a reassessment on that stock, it was whiting, and it dropped it significantly.

DR. WERNER: Yes. Because it turned out that they were measuring predator and prey at the same time. That was a huge issue.

That is a big research question. Yes.

MR. BERKOWITZ: That's the question I was going to ask. With the data that comes in, was there built into this pilot phase any sort of machine-learning process to go through that.

For example, was there any camera technology that maybe could compare a visual with the acoustics and start to teach the algorithm the difference between the species, or does that come later?

DR. WERNER: That comes later. It's a really good question. The machine learning, artificial intelligence thing, is something we definitely need to look at. As you are seeing, they are beginning to look at that for marine mammals as one of the projects. But we haven't done that here. It was not built into here.

Right now, I think this one was almost an engineering survey design, can we complete the

survey in the amount of time needed. The idea here is can we complete this whole West Coast survey in the same amount of time that the white ship could.

It's a simple question, but these very hard questions still need to be done.

Actually, Monday I will be in Oakland visiting the saildrone folks and see perhaps how do we refine what we did here, perhaps some more targeted work to address both of these, or all of these questions.

Okay. And actually you brought up some of the points here. I wanted to say here the challenges to transition, the new technologies to operations is one is that up-front and development cost.

So like I said right now, it's a one-to-one cost, at least for this survey. There could be other surveys for which it could work. The issue of the calibration which is exactly the pull point of how do we tell what's what in terms of the measurements, right now we are going to get acoustic signals, but how do we do the speciation. That's going to be tricky.

There are other issues that come up, do the stock assessors, the models that they use incorporate new data streams. Data streams have different aero variances and properties and so on. So that's going to require some time.

They might not just be able to take the data and use it immediately. They might need to adjust for, the data is a little bit noisy so what happens if you process it. And so on.

So there is a bit of learning there and the training of people to use this. We have been very careful which saildrone, before the survey went out, to meet with the councils to tell them what we are doing so everybody knew what we were doing ahead of time.

But there is going to be a lot of review and we would be the first ones to insist that this be reviewed just to make sure this is going right. We don't want to go too fast on this.

The other thing is, as we all know, we might measure something one year, and did we actually measure differently this year, or were the actual ocean conditions different this year.

So I think we need to do it multiple years.

I think any transition like this is going to take a while. Unfortunately, we know that's a cost of doing two things at once for some time, but if we see a light at the end of the tunnel, in terms of cost efficiencies and such, it might be worth the up-front investment. So those are things perhaps we can talk about at the end.

Yes?

MR. MOORE: Peter Moore. Just curious. What was the decision about picking this territory for this trial? I mean was this the only place, this is where -- is there an obvious reason why you picked it?

DR. WERNER: Part of it was logistical ease because they are based out of Oakland, so they could just do it from there.

The other part was that they have a close collaboration with the folks up in Seattle at the PML, the Pacific Marine Laboratory, so we wanted to work jointly with the PMEL folks because they are interested in ocean acidification and such.

So there was building on ongoing relationships that were already there.

And there was also some, there were some agreements that had already been signed that made things easier.

Saildrone, you have probably seen their work, I will just say advertised, but certainly promoted in a number of places. And they are being very aggressive, and they are meeting with folks, Mexico, down in South America, overseas on the Asian side and all of that.

I think that -- they can ship these things and do it elsewhere, too. It doesn't have to be based out of Oakland.

So I'm going to jump next into a conversation about what projects -- every three years we have something called strategic initiatives. By we, I am talking about within fisheries and this is funded out of the Office of Science and Technology.

And these are initiatives that are supposed to have a lifetime of three to five years, and it's supposed to be a development research effort that then can be transitioned to

operations.

Last time I talked a little bit about the optical instruments, and the AI that actually, the artificial intelligence that came out of there in terms of identifying the different fish and so on.

That was a very successful effort that came out of the strategic initiative three or four years ago.

Another one was untrawlable habitats. So those were two that now have sunsetted because of the three or four-year time that they have.

We called for another set of proposals and we received six proposals, out of which we funded two fully. And then I will talk -- all the ideas were obviously good, but we chose two to fund. One was the, you know, the otolith counter that we talked about last time, and the other is the environmental DNA that we also talked about last time.

There are four others that we want to keep sort of on a simmering stage because they're important. That's what I am going to talk about now.

The first one that we funded was this Fourier Transform-NIR Infrared Spectroscopy thing, which, as you remember, it's a very promising technology that -- counts, that ages otoliths in a different way than counting the tree rings.

So I will just go here, rather than the top left there, which is the otolith, you count the rings. It actually looks at the protein structure within the otolith, and you can calibrate the protein structure to the age of the otolith or the age of the fish. And it does it six to eight times as fast.

So the previous slide there of the shelves there filled with the otoliths was the idea that we can hopefully get through those much faster and not have the backlog that we currently have.

There are tricks still that need to be worked out. We still need to calibrate from one, from the counting, the manual counting to what the machine reads.

But so far, it's been very promising. So this is a three-year project. You need to do

this calibration for a number of species. It's not just simple one species and just move. It needs some work per species.

And some are actually pretty hard. Some of the HMS species, the tuna and the marlin and things like that, are actually, they have -- their otolith structure is different so it's going to require a different way of doing things.

So the next three years, we will be working on this. We have had some very good success with some of the salmon work, some of the red snapper, actually is something that the folks in the Southeast have come up and picked up the method.

So this is very promising. It's relatively cheap. Each one of these instruments is only like $70,000.

So first round of things we're doing, round of things that we are going to do is most of the science centers are going to get one. They can also be taken out to sea, they are that robust. So some of the analysis can be done as we go. So it would speed up the assessments that would happen.

This is one we wanted to do and it has a very short-term immediate impact if things go right.

The other is the OMICS one. That's a much longer-term investment but it has a lot of promise. This is a slide I had last time. The idea is that collecting the samples in the water gives you an idea of what's there. But there is a huge number of issues left over to deal with this thing.

Presence-absence is relatively straightforward, abundance and everything else is much harder, as well as how do you collect the data.

Where did the sample come from, how patchy is the ocean, et cetera, et cetera.

This opens up a whole host of questions, but it's one that I would say that there is a big, big, big international and national effort in doing this.

And Jeanette, who is sitting there at the corner, her PhD is in genomics. So maybe you will help us work all this out at some point. But anyway.

Those are the two that were taken out of the six. We do want to talk a little bit about other things that were recommended by the SAIP, the Stock Assessment Improvement Plan, and one is the assessment modeling itself.

And one of the things in there is that we wanted to take a more holistic look at the assessment and perhaps changing environment, multi-species, et cetera, et cetera.

And in general, a more complete look at what the system is. Again, this is a slide I presented before, and this is just to plant the seed, or just to remind us we have had a couple of goes at the use of management strategy evaluations, which are again quite holistic looks at how do we -- how do we pick ways to manage.

What are the management strategies that we would use, depending on number of what-if conditions, what if the ocean is going to do this, what if a U-sector would like to maximize something else, et cetera.

So it's a rather formal and rather compute-intensive approach to weighing different factors as one makes decisions and trade-offs.

And what I want to focus on is the little circle that's hard to read up there is actually the environmental part, and we know the environment can change and that, of course, is a factor in terms of how we might manage this system that we are looking at.

And again, last time I showed this picture, this is the ACLIM, the Alaska Climate Integrated Models System. It's a very advanced system that allows looking at making these management strategy decisions with consideration of physical climate-forced factors down to eco-system factors to social, a socio-economic variability.

So there are basically three big components that ACLIM does.

This is just to say that we have ways of doing this, and as I said, I think talked about this last time.

But what I want to talk about is what time scale should we be looking at? And what this is is it's referred to as a Stommel plot after Hank Stommel.

But anyway, what it is is a time axis

on the X axis and the space on the Y axis. What it shows is, if you look at just the little cloud there, the gray areas, so on days to weeks you have things that you worry about which are hurricanes and so on and so forth, as you go to monthly time scales, you begin to look at, you know, monsoon cycles.

If you go to a longer time scales you start worrying about ENSOS, Southern oscillations, or you go even to longer, century time scales you are talking about global warming and such.

And the colored bubbles are actually the kinds of things that we are concerned about, you know. If you look at the days to weeks to months, that are industry operations, aquaculture and such, those are the things that you are worried about making decisions based on what does the environment looks like on those time scales.

Is there going to be a harmful algal bloom, is there going to be a warming event, things like that. Is something going to change in the water that makes you operate things differently.

If you have some information on yearly time scales, then you can think about annual catch limits and things like that. And if you go and start thinking longer, you look at sustainability and things like that.

The things I put in the box in the dashed area is the sub-seasonal to seasonal time scales.

And this important because it's the hardest part of all of this, of this entire spectrum, of this space-time spectrum, if you will.

It's the one that affects a lot of what we do, as I said, the annual catch limits, the industry operations; but it's also, as I said, one of the hardest ones to forecast properly.

I'm going to go to the next slide here and say why. I took the same picture and put it up there in the top left, but what I put there was a weather map.

We kind of know we can do weather to within pretty good prediction to say a week to 10 days.

And the reason is, basically, we have a

good capability of measuring a lot of what we need to measure in terms of winds and humidity and satellite data, and so on and so forth.

So it's what we call -- it's an initial value problem. So what that means that you take all this data, you put it into a model and you just run it forward about five days, and that's pretty good. We can do that.

As long as you have the right number of initial measurements, the evolution of those measurements in the models is captured pretty well.

If you look at the top right, you know, that's what we call a boundary value problem. So that's like, okay, the sun and the earth. And it's sort of what happens between the heating of the sun and the, you know, what happens internally in the earth and the atmosphere. So that gives you an answer.

So there are different physics and different approaches in looking at the two extremes. But how do you connect the two extremes is where the difficulty happens.

So if I say I can do this part right,

and I can do the bottom left right, and I can do the top right right.

But there are a number of different wiggles, there's a number of a number of different trajectories that can happen as you go from one to the other, and that's the tricky part. That seasonal to sub-seasonal time scale is tricky.

It's also what's been identified recently and what's now referred to as the Weather Act, and the Weather Act is the way that some people refer to is it's like the Magnuson Stevens for the weather folks.

So now they are required to do sub-seasonal to seasonal forecasts. And by that I mean weeks, to say a year or two, which is again the sweet spot of issues that affects us so directly.

I will talk about one, and the warm blob is one example of a sub-seasonal to seasonal event that had we captured, we could have done a lot of things, anticipated and such, and we didn't catch it. We just didn't know it.

And so if we refer to, you know, refer

to the blob as a marine heat wave, and marine heat waves now you have probably seen these referred to in the literature and newspapers, the one blob is ours, it's the one in the sense that it's more visible to us, but it's gotten to the point where marine heat waves are even being categorized in names, almost like hurricanes.

So you can see marine heat waves categories. Where are the categories, I can't see that far. Category one, two, three, four here on the left. And they are categorized by how warm they might be relative to a mean, how long the warmth lasted, et cetera, et cetera.

On the right there, there are some examples of marine heat waves that happened in the Mediterranean, in the Tasman Sea, in the Northwest Atlantic and the North Pacific.

They are occurring, and we are beginning to understand, we are beginning to know to look for them.

And you know, you have all seen the picture of the blob, so I'm not going to spend too much time on it. But again, it caught us off guard. We knew once it was happening, it was

happening, but I will show you some predictions later about how we didn't catch it.

But other examples, a marine heat wave had to do with how much snow there was in this year, we all know how important for the management of salmon and so on. And I threw in the atmospheric river there in the bottom as another of the seasonal to sub-seasonal time scales that are important to forecast.

So the last couple of days -- and again I apologize for not having been here the entire meeting -- is we were meeting with the folks at OAR, Oceanic and Atmospheric Research and the National Weather Service to see how it is that the work that they are doing under this Weather Act, and the work that we are doing within Fisheries matches up in terms of them knowing what we need and us working with them to see how we can help them fine-tune or focus the models that they are looking at.

This is just in here because we know these had economic impacts. And I'm not saying anything new here. After the blob, you know, there were estimates of the impact on the crab

fishery, on the squid fishery, on the sardine fishery, on the hake fishery, on the salmon fishery, everything was affected, with the upside being the bluefin tuna in Southern California.

And the other example that I think I talked about last time, that I think a lot of people have seen is not just what happened during the heat wave, but also after the heat wave, which was the Pacific cod assessment in 2017.

It's that thing right there, which basically just plummeted, and we know that that happened for two reasons. One, the fish metabolism was running way high because of the temperature of the water, and the other one had to do with the food wasn't there.

So there were two things having to do with the blob, that the heat wave that we are able to explain this precipitous decline, if you will, of the Pacific cod.

So how did we do the forecast?

MR. UPTON: In terms of the Pacific cod, how are you guys going to be able to reconcile some of the research that you are bringing from the northern Bering Sea on the

genetics.

It seems that that's going to be a challenge, because one of the things I have heard is that there has almost been a reciprocal increase in the northern Bering Sea; but because we haven't a loft of kind of data to compare to in long time series, it's going to be kind of difficult to wrap that in.

Is that something that you guys are giving some more thought to? I have talked to people at the Fisheries Science Center in Seattle, and I have heard lots of different answers so I wondered what you thought.

DR. WERNER: Yes. So the question is whether this was a decline, a local decline or a shift in the population, right.

Those are things we are looking at. The initial look suggested that it wasn't a simple shift. That doesn't mean that we fully covered the whole area, so there could have been, there could have been a shift.

And that's one of the things that we do need to work out, to acknowledge that that drop could be both that, you know, the biological

things I just talked about, but it also could have been a geographic component.

And it's one of the things about, for example, sending out, sending some saildrones out there. That could be something where you could just say, you know -- in cases like this, let's say we do surveys where we normally do, but also send some scouts, and see if, in fact, the population has expanded or shifted.

MR. UPTON: So in terms of the saildrones, are they able to actually go and kind of be on the traditional survey areas and get the same data and be able to say we think that's cod out there and differentiate from pollack, or are they just going to be able to basically say there is some fish out there they're sounding. I'm not that familiar with that technology.

DR. WERNER: Yes. That goes back almost to Mike's question, can we tell the acoustic signal between one and the other. I don't know the answer to that one.

But these are exactly the kinds of things that we need to talk to saildrone about, as well as to our folks and industry.

What do we need to do. Is it a matter of changing the frequency on the acoustic instruments, or what is it? But yes, I don't know that.

But those would be the good questions to ask. So what I want to point out here is really not -- Mike, sorry, did you have a question?

MR. OKONIEWSKI: Not a question, but I think there are quite a few in the industry that I talked to anyway that are pretty confident they can tell these acoustic signals apart.

So there might be some consulting or something in there that could be -- augment what you are attempting to reach.

DR. WERNER: That would be great. This is the kind of thing that, perhaps, at the April meeting, at the council meeting when all the data is in, or maybe before then. Actually, ideally we would have that discussion with industry before the presentation to the council meeting to see if we can get help on that.

So that would -- yes. So what I wanted to point out here is not to talk to, because they

are pretty straightforward, but it's this bottom one. This is 2013, '13 here to 2016, '17, something like that. And what it is, is every December, December of 2013, December 2014, December 2015, models were initialized and run for the North Pacific.

And what you see here is just about all of them missed the onset of this warming. So you see, boom, the warming happened and they all said it was going to be down here.

But yet, once after the warming started if you went to December '14, or '15, it captured the decline of it.

This is meant to be an example of a seasonal to sub-seasonal forecast that had we known that this was coming, we probably would have been able to anticipate some things.

Exactly what the reaction is, we don't know. I guess, now that we have lived through one, maybe we can anticipate some things. But this is something that -- this is the kind of conversation that we are having with the folks in the Weather Service and so on, to see why did we miss this. Why was this so -- why did it catch

all of us by surprise. Yes.

MR. BERKOWITZ: On a micro scale, I am really interested in this topic. Sorry.

In the red snapper fishery in the Gulf this year, as the states were managing under these EFPs, we have very different results, for example, Florida ended up going about 113 percent of their allocation; but a big part of that had to do with the fact they didn't know they were going to have 40 days of pristine weather. So they ended up having much higher effort than they expected.

And then the Western Gulf, the Texas charter fleet for example had a 55-day season, they lost half of that to bad weather. It's a much smaller scale, but it obviously impacted the ability to set seasons appropriately.

I just wondered if there is any work in here that could be applied at the micro level to help managers at the local level to make better decisions.

DR. WERNER: And perhaps building on Matt's question as well, if we knew that a warming like this was happening, or something, an

environmental signal was happening, perhaps we would have sent things into a different area to look for the fish or to see did they actually move.

In which case, the assessment would have been different; and we wouldn't have said, if we actually found them somewhere else, or we expected there to be a distributional shift, then we would have perhaps expanded the area of where we would have been looking for fish.

So things like that are things that come to mind in terms of what happens with different environmental settings.

There are two questions there, yes, Kelly, and then Peter.

MS. RALSTON: So kind of along those same lines, is there a way to use this, even if you can't predict it from the start, can you use the pattern after the fact to relate it to fisheries recruitment, or stock availability, so while you may not be able to predict it right this minute, you can at least see after the fact what's happened and you can incorporate that into stock assessment, so that we know we have these

peaks and valleys as far as individual years, year classes.

And is there a way to incorporate that information?

DR. WERNER: I'm going to look at Joe and Mike down here. Because I think the Pacific Council actually did that with salmon. Is that the case? They, given this information, they actually changed the way that the management was. They changed their three-year average. Could you perhaps expand on that in terms of an example of how this data was used, or the information was used on the salmon side?

MR. OKONIEWSKI: I really can't. I was paying attention barely to it. But it was of interest.

I mean you're using environmental parameters to start making hard-core decisions about, and anytime -- you know that's kind of a new territory, I guess, so I have an interest but I didn't really pay that much attention to what they did, in actual regulatory stuff, and salmon at the council level is a little bit outside of my three to four species I am covering.

DR. WERNER: I think what the expectation was the ocean conditions were going to be such that when the juvenile salmon made it out to the ocean, they weren't going to find any the food.

They said, "Well, we expect two or three years from now when the salmon are going to return, it's going to be a very low return." Is that correct? Did I get that right, Joe?

MR. SCHUMACHER: Yes. They have been modifying those as we go along as well, as we have gone along as well.

So as soon as they got the word on it and realized the conditions were so negative, they incorporated them into the models right away.

DR. WERNER: Right. Right. Peter?

MR. MOORE: This isn't a plug, but I do have a great example of what I believe is exactly this happening in the East Coast.

You have this massive cut in the herring, sea herring quota; recruitment failures is what everybody's talking about, warming temperatures, fish moving out and very little

evidences of recruitment.

That's what we are told and I actually believe that. And at the same time, you have this massive population of menhaden coming in. And yet the Menhaden are not well surveyed.

There is no winter survey on them. All the fishermen will tell you that they are offshore in the winter time and there needs to be a survey out there.

I am looking at this -- and that's a huge bait supply. Either way, the lobster fishery, Matt and I were talking about this in Maine, they are going to be in real trouble this summer, because there is not -- they need a hundred thousand tons plus of bait and they are going to have maybe 20.

And so it's -- and that's a half billion dollar fishery, the lobster fishery alone.

So all I am saying is when you see this sort of disconnects -- where to a lot of us there is a fairly clear path. It just hasn't -- the pieces have not come together yet to see this is happening over here, and this is happening over

here, but this is also a Fed ASMFC management issue. Right?

So there is -- I think this kind of information -- I can't imagine that Jon Hare didn't have some of this temperature information going into the herring assessment.

But even then, it was kind of a big shock to everybody how much of a drop there was. This just happened this past spring and summer.

I would just encourage you guys to -- I don't know institutionally how this all works. But to get the kind of rigor in terms of a survey that you do on the Federal species done on state species, which aren't necessarily in state waters.

They are off the shelf, almost on the mid shelf in the wintertime. That's federal waters, but they are not, as far as I know, not surveyed well at all.

DR. WERNER: Turn on your microphone.

MR. OKONIEWSKI: I'm sorry. Did you want to answer first?

DR. WERNER: In part, I was going to say that it's part of our thinking of going

toward eco-system-based surveys. And that's yet another level of inertia that we are going to have to deal with.

And as you say, are we measuring single individuals, or are we looking at the broader, you know, response to the system that we are seeing.

And that's another conversation that maybe next time we meet would be an interesting one to talk about.

How do we actually manage under eco-system-based management framework.

Because right now, folks are large on the single species, but as everything is shifting and moving and such, we probably need to expand that. And then there might be trade-offs in terms of how well we do one versus the other versus the whole.

And so I think we might have to think about how do we evolve the metrics in terms of how do we assess what we are assessing.

MR. MOORE: To follow up, I give you high marks of what you are doing in the northeast, as far as that eco-system work.

And I think there is, there is still apparently some institutional battling going on with the stock assessment crowd versus the eco-system crowd.

And trying to bridge that is -- I think you are doing a great job of it, clearly in certain places. And somehow it's eventually going to permeate through.

But one other question was on the marine heat, what was it called, the Weather Act you are talking about. So the Weather Act, which I wasn't aware of, is that something now that's codified like Magnuson is in terms of what you have to do?

DR. WERNER: Yes. I forget the full name of the thing, but if you do a search on Weather Act, you will find, and it is codified, they have to give reports every six months, as I said, they call it their Magnuson. It's equivalent in terms of the requirements.

It singles out specifically sub-seasonal to seasonal. So it's difficult to spectro gap here between weather and longer term. And that affects agriculture, it affects all

kinds of things in terms of how do you plan exactly on those, on sort of that one to two-year time scale. And it affects a lot of the fishery as well. Mike?

MR. OKONIEWSKI: Well, I think the science side recognizes there are shifts in populations in accordance, in reaction to environmental change. And if climate change progresses at certain rates, or at fast rate, it's probably going to be a fairly rapid transition of geography or feed or whatever. But the problem I see is that the regulatory side does not react, I mean to that, in a sense where you can actually keep fishing.

And I had a little exchange with Matt and, just for example the Bering Sea that he mentions, the long liners can go up there but not the trawlers.

And you are talking about industries worth hundreds of millions of dollars. So how the management system -- and we talk about flexibility all the time -- but it seems to me, I just watch one or two councils -- but it seems we are getting more ridged and not less.

So even though there is -- and normally, the fear factor is over if you see an environmental change, but there might be a shift that we can take advantage of.

But it might move to a different region, I would think especially on the East Coast, where maybe they are not even regulated that way to handle it. I don't know.

So this has to be taken into account. If we are going to, I guess, adjust the management system as the climate itself adjusts and these changes take place. Or else we are not going to have too many fisheries producing much income.

DR. WERNER: Yes. I think we are wrapping our heads around, on the East Coast the Black Sea Bass is perhaps the example that brings in not just shifts in the population and other things, but also the challenge of how do you manage that.

I am not sure, Mike, have you followed that, it's a fascinating story, one man's fascination is another person's whatever.

But it actually talks about who owns

the fish even though they are not in the waters where they were when the laws were written. It's a very interesting story.

But you're right. It's interesting, so we also talk about international disputes, this is a cross-state dispute and also across recreational fishermen and commercial fishermen. It's something we will have to expand how we think. I agree with you. Yes.

Let's see, where was I? Okay. And then the last thing, really the last slide is, one of the proposals that unfortunately wasn't funded under strategic initiatives, but we decided it was important and we need to do it anyway somehow, is the formulation of a working group that revisits all of our surveys.

And as it says over there in the bold letters, "No comprehensive evaluation or surveys has happened since the 1998 publication of the NOAA Fisheries Data Acquisition Plan."

So it's been -- I can do this in my head, right, 20 years -- 1998 to now. It's been 20 years since we basically have had surveys follow the pattern that they have done for the

last two decades.

But given everything that has happened, whether it's advances in ships and technologies, or like we were just talking about, changes in environment and changes in thinking.

How the models can incorporate more, need to incorporate more. We are going to evaluate -- I can't see it from this far, I must be getting old.

It says -- so we wanted to look at -- evaluate the surveys that exist and say are they still doing what they were intended to do. What have we learned.

But also just grow, you know, and incorporate more information; do we need to do them as frequently as we do them, or can we sub example, given that we understand the system better. Et cetera.

So this is something that we probably are going to work on over the next year. And then, together with everything else that I talked about, new instruments, new models, we also need to think about how we are doing surveys.

And I meant to include something here,

ICES, which is the International Council for Exploration of the seas, is going to have a workshop in Seattle in January. This brings all the different countries from ICES. So this is the North Atlantic side of the ocean, to talk about what they -- I think the name of the workshop is Necessary Reduction in Surveys.

And that just simply comes in with the difficulty in getting ship time, the cost of ship time and so on.

And as we are looking at -- that's the title of the workshop. If that's actually going to happen, I'm not sure. Maybe all I want to say here is just as it is important to get the technologies and models right, it's equally important to see how it is that we are doing our surveys.

So maybe I will just leave it here and we will report out more at the next meeting. But, Matt, I think you had a question.

MR. UPTON: I guess it's more just a reaction. I really think that you -- and in general NOAA leadership -- needs to think about that premise of the necessary reduction surveys;

because based on everything you said about the changing environmental conditions, I think, if anything, it should be going in the opposite direction.

Especially if you are wanting to kind of maintain trust within the industry, because I am speaking for myself, but also a lot of people that work on the boats in meetings I go to, there is really a kind of separation between hard data and then the modeling.

And so when people see less hard data with less survey vessels going out, it's hard for them to feel confident that a step-up in modeling gets away from that.

I think there are ways you can deal with, if there are some budget concerns, both in terms of prioritizing NOAA's budget, but also EFPs and working with the industry that are fishing in these areas.

Because you really, as things move forward, I think this is going to accelerate some of these changes we are seeing. If we are going in the opposite direction of less surveys and not taking advantage of the vessel's opportunity, I

think that would precipitate a really big problem.

DR. WERNER: I totally agree with you. This is a time when we need more data and when the convenors of the workshop called it the necessary reduction, it wasn't that they were happy about it.

It was like they were saying, and actually the last bullet there is the one that talks about working with industry and charters and such, and realizing that's going to be part of how we are going to collect that data that is so necessary that you are talking about.

So I totally agree that it's a different way of going forward.

MR. UPTON: Stay with this one second. Do you know there is some openness at NOAA to figure out how to work with vessels? Because I think the existing model that people are concerned about how you pay for a ship date, either on the NOAA Navy or on a dedicated charter vessel, but I think there are multiple other ways to kind of get at that in terms of having someone as part of their trip do a few tows that are

within a scientific kind of framework.

There are already federal observers on the boat. I just think if the concern is around getting the data, there are other ways to go at it. It would be good if there could be some stakeholders at that meeting and different folks.

I know in the North Pacific, people are really concerned. One of the things they are starting to do -- which I think might not be as helpful as that -- is have kind of a separate industry vessel that's funded through some kind of foundation.

I think it would be better to have it be more closely working with NOAA.

DR. WERNER: Yes. This is part of the conversation that we have certainly with Rick Methot, who is leading this particular working group, is to do exactly what you are saying.

So we should have that -- it should include that conversation from the get-go, just like with other things.

Sorry, I am looking --

CHAIR FELLER: I am staring at you because it's 10:00 o'clock, and I don't want --

so just we need to move on to some other business here. So I just want to point that out if you wanted to say any concluding remarks.

DR. WERNER: Two quick questions, but the concluding remarks I think I talked about already. One is a lot of this stuff I talked about is presently incremental and supplemental. It's not clear yet that we are going to be able to replace with what we are doing with the new technologies.

The whole cost-benefit issue is one we are talking about that, again, was implied in the conversation, as well as, you know, the additional complexity in the assessments that I think we again talked about, Peter talked about it and others. That's all I wanted to say with these concluding remarks.

But I think there were a couple of questions. Yes, Richard? In front.

MR. YAMADA: Just a quick question. I see the climate modeling was not a priority so we are doing it funded.

I just a few weeks ago was at an MSAB meeting, and I think everybody was aware that the

climate was affecting possibly, has some effect on our stock assessments.

But the scientists or advisors don't know how to model climate change into the MSAB process.

So really, it's -- and my personal feeling is that our human behavior and harvest may be less effect on the stock than the climate does. The climate might be affecting these stocks to a greater degree than our control of our behavior, harvesting the stocks.

So my feeling is we should try to put some priority and try to make this interface on how an MSAB could model climate change into their modeling to help us make better decisions.

So how far are we from doing that?

DR. WERNER: I am sorry if I gave the impression that modeling at that scale wasn't important. It is.

But what we thought was that that's best done in us collaborating with these two other line offices that are doing it by mandate, of doing the Weather Act that I mentioned before.

So what we are doing is working jointly

with them as opposed to us starting the modeling work on our own.

That's what I meant to show in these examples, how important it is to get these new scales right, which are part of the climate modeling and is part of what they are wanting to do as well.

No. It's hugely important in terms of where we want to go. We think it's better to do it in collaboration with them.

They are going to be happier because they then can justify what they are doing by virtue of what they are doing impacting these sort of the living marine resources part of NOAA.

If I gave the wrong impression, sorry about that. It's supposed to be even a better way and more strong way of doing it. Yes. Mike?

MR. OKONIEWSKI: I think Stephanie might be ahead of me here.

MS. MORELAND: In the North Pacific, we have the ability tools to adapt quickly and integrate new information when it's available, but observation and modeling are key in order to know that that needs to be done.

So I very much support the priority that Matt has articulated.

Dr. Sullivan was very vocal about having a focus on looking for more opportunities to use data collected privately in collaboration with NOAA, so platforms of opportunities. Particularly in the Arctic and there was a lot of discussion about the Bering Sea with oil and gas exploration that was occurring in the Chukchi.

Has that remained a priority from leadership, just from my fact perspective, does that need to be echoed again, or does Admiral Gallaudet have the same focus?

DR. WERNER: Is your question specific to the Arctic and Upper North Pacific, or just in general?

MS. MORELAND: More generally. There was a lot of focus and discussion at that time about platforms of opportunity recognizing budget constraints. So is that still a focus from leadership?

DR. WERNER: It is. Anything from, you know, from citizen science to higher. So it is something that -- you know, I haven't heard

Admiral Gallaudet saying anything different in terms of the importance of getting additional data and such.

But I'm not sure if -- maybe somebody here can help me out. I'm not sure he said it directly in terms of the ships of opportunity or the collection of --

CHAIR FELLER: Yes. I'm not sure. I haven't been in any forums where he has particularly weighed in on that. That doesn't mean he has. He hasn't, so --

MS. MORELAND: So I think that Matt's suggestion that there be industry present and collaborative, thinking on that is a good suggestion; but is more strategic planning and proactive planning needed if you guys are already talking about necessary reductions and surveys as a fact?

DR. WERNER: Yes. Because the quote, necessary reductions, which again are not wanted reduction but necessary in terms of budget, I think it would make sense we have got to offset that somehow.

If we can offset limitations that might

be there, not just here because this is an ICES workshop, broad North Atlantic countries, then it would be something to perhaps discuss in the workshop to see how to offset some of the anticipated reductions by partnering and doing the work with ships of opportunity and other measurements of opportunity.

So that might be one of the outcomes that comes out of these things.

MS. MORELAND: This is a critical issue. Everything we have talked about requires inputs.

The monitoring, observation, to know again what we are working with.

Anything else on our agenda, we don't really have opportunity to optimize if we don't have these basic inputs.

So I think this is the key and core discussion and needs to be the priority.

If there is a gap here -- not a sufficient plan, not deliberation about priorities such that surveys and assessments are supported -- the MAFAC needs to address this before the close of the day.

DR. WERNER: And I am taking this -- more than a mental note about maybe this should be -- a focus of an agenda, or maybe the science report of the next time is just to just talk exactly about these issues.

What are we going to do about the gaps that might exist should we not be proactive in the way that you and Matt are identifying we need to be.

SPEAKER: Inaudible.

DR. WERNER: We'll leave it up to the Chair person here.

CHAIR FELLER: I think that was an important conversation to have. But Mike can be the last question.

MR. OKONIEWSKI: Not a question. I'm going to echo what's been said here -- it's been said more articulately than I would have -- but it's absolutely critical.

And I agree totally with Stephanie and Matt. I will say to those that don't know that my work with Cisco in the Southwest Science Center to set up Proof of Concept Survey, and he is very big on cooperative research on what I

have seen, so I think this fits into his philosophical outlook on these things anyway.

I think if we keep pushing and find out where we need to go strategically to get support for this, to help you. But it is hugely important, especially in the face of climate change.

MS. LOVETT: I would like to say thank you to Cisco. Your presentations are always very engaging with a lot of interesting -- and not that the others aren't interesting, particularly the one I gave yesterday - but II always find these a really great way to get a great source of engagement and come up with some new topics and ideas.

So thanks so much for making the time, Cisco, II appreciate it. And I will turn it over to the Chair.

(Recess)

CHAIR FELLER: We now have Subcommittee and working group reports. And I think we have a couple of decision items that we have to deal with, especially under the Commerce Committee's purview.

What we're going to do, we'll start with Commerce, then we can get a report from Recreational Fisheries, Strategic Planning, and, Sarah, do you have a report -- you are good? Right on.

We are going to do this until about 11:30. So I think most of the action we have is under the Commerce Subcommittee, so I am just going to turn this over to Roger and Sebastian and Heidi who I am assuming have a plan for -- I think there is a second item under your work plan that requires MAFAC approval and there is an Aquaculture Task Force report that requires approval.

So who do I lob this over to?

MR. BERKOWITZ: I will jump into it and then we will play with it back and forth.

But I think that we were thinking about in a way that was kind of narrow until we got the presentations yesterday from Linda and John and Steve. And I think that that informed a fair amount of our thinking, in terms of what goes into them.

The first bullet point, I think, the

first task was how do we help promote U.S. caught fish in the marketplace and utilizing FishWatch as a medium.

But I think the more input that we get from some of the consumer facing groups, the more intelligent decision-making and strategy that we can come up with.

I don't want to completely want to punt on it, but I think it needs more discussion certainly on whether we do this by phone or we do this at the next MAFAC meeting.

And perhaps we also get another panel. We can't get enough good input from some of these groups.

The other thing I think that was extraordinarily important yesterday was listening to Jennifer's report on what goes into the, what was in the Seafood Promotion Act.

And is there, you know, something to think about should there be a national Fish and Seafood Promotion Council, such as the one that was sunsetted.

Again, some of the statistics that resonate from yesterday, is there only 90, 90

percent of the population is not eating fish.

That shows that there is a phenomenal opportunity to move the needle.

I think we go back 20 years, I think the per consumption poundage per person was 14 pounds per person. Today it's 14.9. So that there is still a huge opportunity there.

I think that for this Subcommittee to be effective, we just need to keep getting more and more information.

So I would punt and, Sebastian, throw it over to you and get your thoughts.

MR. BELLE: Thank you, Roger. No. I am right there where you are. I think we got a lot of information yesterday, and the Committee probably needs a little bit of time to digest it and process it.

So I support your idea of having a follow-up conference call and kind of reworking the work plan. I think that would make a lot of sense.

MR. BERKOWITZ: And I think that that also, part two, is how do we make sure some of the accurate information gets to some of the

consumers out there.

I think they go part and parcel. Maybe we were a little bit too optimistic initially in terms of thinking we could do this right away.

There is a great opportunity here and I just think we need time to better think it through.

CHAIR FELLER: So what we are going to do is the Commerce Subcommittee work plan that was distributed by e-mail, we will take that back. You guys will continue to work on it in light of new information, and everybody can look forward to a conference call sometime in the next few months, I assume, to go through.

MR. BERKOWITZ: Yes.

MS. LUKENS: I want to ask a point of order question with Heidi. Roger, can you turn off your mike, please? Thanks.

So in terms of one of the things we had intended was to have all of MAFAC to bless this work plan today, and obviously it's an ongoing conversation.

Correct me if I'm wrong, Heidi, these work plans are, generally get the blessing of

MAFAC, then they are okay with the Subcommittee working on this.

I think it's okay that they have an evolving work plan, if MAFAC agrees to that here, that they defer to the Subcommittee to do further investigation and report back, that we don't have to have the necessary concrete approved plan.

Can you confirm that for me, FACA Expert?

MS. LOVETT: Yes. So I think, especially because there were so many new people, and getting a plan on paper was helping you all understand process; and it was to get the general idea out there what you were hoping to be working on for the next one to two to three years.

So in the past, work plans have not been sort of line by line by line approved. It's the general concept, where you are headed and how you get there oftentimes morphs overtime. And it usually comes out with a great product at the end. So that's your goal, right?

So I think if everybody feels comfortable with that, that that's totally the way most work groups work.

MS. LUKENS: So the action, I guess, would be, do we need to take a vote on that everybody is okay with it or not? What?

A consensus nod. Erika, do you want to run a consensus nod here, Miss Chair?

CHAIR FELLER: Can we just get a round of thumbs up? Okay. You are good to go.

(Approved unanimously)

CHAIR FELLER: I feel like Caesar.

MS. LOVETT: I was just going to say, so just to confirm, so Commerce Subcommittee folks anticipate that what I have been doing to set up calls is first getting with the chairs and make sure they have some open dates. We have been sending out doodle (sic) polls.

And probably in the next few weeks, since we don't want to drop the ball, you all have a lot of good information that you've just absorbed. So within the next few weeks, we will try to set up a call for you, maybe before Thanksgiving and then another one in December to kind of keep the momentum going. Does that sound appropriate?

Great.

CHAIR FELLER: Yes, Megan.

MS. MEGAN DAVIS: Quick question that might help the Subcommittee work on this.

Were the power points from the panelists yesterday also part of our package?

MS. LOVETT: So we just got John's yesterday. I will be able to put that up, post that, and the one from Linda Cornish.

The one from Steve, he's we requested -- can you turn your mike off, please -- he has requested that we don't post those just yet, because it's pre data and he is doing a formal paper.

But once that paper comes out, he's very happy to share it with the Committee.

MR. BELLE: So can I just ask a clarifying point on that? He was not willing to actually share the PowerPoint with the MAFAC members?

I think that's a shame because that was really important stuff.

MS. BRYANT: Because it was still in analysis, and he is still doing it, it's pre publication; and they are going to be launching

that and doing that paper at the Boston Seafood Show, the national -- the Seafood Expo North America in March. They are going be releasing it. I know they put a lot of money and a lot of time. So it's really their proprietary stuff.

So he will share when it's done. But this he was just giving us a sneak peek. And we kind of promised him: Will you give us a sneak peek if we promise that we won't post any of your things in advance.

MR. BELLE: I have a follow-up process question, which is because MAFAC is a FACA, if Roger and I were to go to him and prevail upon him to share with us, if we were in possession of those documents and shared it with the rest of the Committee, would that be a problem on a FACA, probably huh?

And I don't know that Roger and I would be successful in bending his arm.

MS. LOVETT: I think, I had a short conversation with him. And actually, I had done a seafood survey myself 20 years ago. And we had a good conversation. He has got other reports and data. So maybe there are other reports we

can get ahold of that are similar to share, because some of the information hasn't changed all that much.

But I know what you are talking about. I think the more specific key points, and obviously you will get a transcript of the conversation, too, so you will have some of the highlights in written form and we can summarize that for you.

I think there are other ways of getting what you are looking for, if that helps.

CHAIR FELLER: Stephanie?

MS. MORELAND: I would be happy to reach out to the Alaska Seafood Marketing Institute in order to get their third-party information. They have a lot that is around the question of consumer information and what their priorities are in terms of additional support to feel comfortable with the category of seafood.

CHAIR FELLER: Do we know what the ETA is? So it's at the Seafood Show so that'll be about March that that stuff will become publically available? Okay?

So do we want to talk about

aquaculture?

MR. BERKOWITZ: I understand Matt Upton has agreed to give us his assessment of the Aquaculture Task Force. I am just kidding, Matt, I am just kidding.

Apparently everyone is well-read on this. But the folks, the content folks, Megan and Sebastian, have done some tweaking on it so I will leave it to them to make recommendations, or whatever, on the plan.

CHAIR FELLER: So you guys should have all gotten this document in your e-mail from Heidi last night.

MS. LOVETT: So, Roger, I don't want to steal your thunder, or Megan's. I'll just preface that, yes, there were hard copies handed out and you received it electronically.

The general question -- Megan will go over some of the highlights of it. But the general question is again in concept does everybody like the general content, or are there any content questions for now? Tweaking and minor edits and corrections, we hope that you all, MAFAC will agree to allow Megan and

Sebastian to do that kind of fine tuning that we are not, that are not editorial, they are more just grammatical so to speak, versus changing the content of what you saw. Is that right?

So I will just pass it over.

CHAIR FELLER: Who are you passing it over to?

MR. BERKOWITZ: Go, Megan.

MS. MEGAN DAVIS: Thank you, Heidi. Yesterday Jeanette gave a good overview on how this process came to be and how we got to this document which we worked on, over the last four weeks, would that be right? Yeah.

So it moved fairly quickly, because we had a lot of expertise on ATF, so it really paid off.

I did give it one thorough review yesterday evening and this morning, and mostly what I found was just some things where there could be examples to really fine-tune it a little bit more. Because just from our hand, it's going to go into more reviews and also into regulatory aspect side of it.

So it leaves our hands and it starts

more process of more reviews and more stakeholders' input on it.

So I don't know if you want me to go over each section in a summary, or if you had any comments from looking over it.

How much time do we want to spend on this topic? Because I know most of you want MAFAC to bless it so that it can move on to the next stage.

CHAIR FELLER: It's kind of up to you what you want to present but if we could just through this and get to a decision in say the next 10 or 15 minutes, that would be super.

MS. MEGAN DAVIS: Would you like a high level summary, maybe with between Sebastian and I --

CHAIR FELLER: If you could give a high-level summary of kind of what the goal and intent, how you see the pieces fitting together and where this goes. What's the product that's going to come out the other end of this would be something that would help me.

MS. MEGAN DAVIS: Actually, I would want Jeanette to talk about the final product.

MS. JEANETTE DAVIS: Okay. So the final product is the NOAA Science or Strategic Science Aquaculture Plan, and as I talked about -- well, actually Paul did a good job yesterday of kind of outlining that there was a NOAA report that assessed all of our aquaculture programs, where we could do better, our level of investments, all of that.

So the decision was to create this one NOAA vision for advancing domestic aquaculture. And a part of that is getting input from industry.

And so the task or the ask was for the ATF to think about topics that should be incorporated into that plan.

So what you guys have before you is essentially the input from the ATF.

So there were about over twenty-five different topics that came from the ATF, and then they were binned into categories, so you see the categories on the plan and the division for each of those topics. And then the key benefits for society, for the environment and the economic benefits.

And again, this is just the industry side. But then there is going to be regulators, managers, several NOAA experts, other federal agencies that kind of weigh in on this, and the MAFAC will ultimately see the final product, which will be the Strategic Aquaculture Science Plan.

Yes, the draft. Yes.

MR. BELLE: Can I just add one thing? I think the other piece that's going on internally at NOAA is that they are looking at their existing facilities and expertise areas to see how they match up with the priorities that are coming out of both the regulating community and the industry.

So there is a third part that that Mike Rust is looking at what they have internally for capacity, and are there places where there is a mismatch.

Where you see the final thing, I think you will see that as well. It will be all three of those things together, which is to my knowledge the first time that's ever happened internally in NOAA, so it's kind of interesting.

MS. JEANETTE DAVIS: Yes.

CHAIR FELLER: Megan, anything to add?

MS. MEGAN DAVIS: No. That was a great overview with Jeanette. And that was important what Sebastian said because NOAA has had an external review of the science centers and other aquaculture aspects. So there was a report we were provided that also helped us to get an insight into it.

There was a lot of valuable information that we were provided as very helpful documents as we crafted this together.

CHAIR FELLER: Questions about the document? Joe has a question and Richard has a question. Joe can go first.

MR. SCHUMACHER: Thank you, Madame Chair. So just a clarification, first time I have seen the document. Really appreciate the work. It's comprehensive as heck, I think you have covered a lot of ground with this.

You have it organized in the key benefits section for the environmental, economic, and social structures in some cases are clear benefits and other cases are more aspirational

goals.

Is there any clarification on those? Just an example, I see we have, it's a benefit, of course, decreased use of harmful antibiotics and chemicals -- I'm in the pathology section right now.

And then down in societal we'll see the consumer can trust U. S. Cultured products as free of antibiotics and harmful compounds, which would be an aspirational goal on that.

So I just I wanted to see if that's going to be clarified in the document?

MS. MEGAN DAVIS: That's a great question, Joe. So I think there needs to be a little bit more wordsmithing because the vision was where you hope to have achieved at the end of X number of, a time scale of some sort and the key benefits was really how are you going to get there.

So in your particular example, it might be that there could be use of antibiotics at one certain stage, but that it wasn't going to be at a stage where it would be harmful for humans to have consumption.

So there is still a little bit of where is the vision and where is the actual procedure, or the method to get there. So that the document still has a little bit of that in it that it needs to be cleaned up but I'm sure that that will happen over the course of time.

MR. BERKOWITZ: Another quick one on this, and I know you have Mike Rust working with you on this -- which I have known Mike a long time. And I saw in the physiology section is the only point where I see new species, with production.

And maybe -- I haven't looked through it entirely. I wondered if that wasn't a scientific discipline on its own that might be considered or was considered in your process.

MR. BELLE: Yes. So we talked about that in the ATF. And I don't honestly think that we came to a conclusion on that.

There was discussion back and forth on whether that should be broken out or not.

It was left the way it was now for the moment.

We kind of got delivered, this is a

template, so I think in particular some of the industry folks were having a hard time wrapping their head around this particular template.

So I agree with Megan that I think editorially, there will be some changes in this document. Not in the substantive sense of the word, but in the way it's formatted and the way it's kind of put together.

So it may come back out as an individual expertise.

The discussion we had internally at the ATF is there has been an awful lot of money spent on prospecting for new species, many times driven more by the biological fascination of the biologists than the commercial realities of what may or may not be commercialized.

So there is that part of that discussion still going on.

CHAIR FELLER: Richard, sorry, Megan.

MS. MEGAN DAVIS: Just to add a little bit to that, you will see throughout the document there was a lot of discussion about making sure that there is new strains of species that can be adopted into different settings, different

aquaculture settings, but also climate and natural disasters issues.

And maybe more robust species that can handle this so that there are changes the food security through aquaculture can be more stabilized.

It was interesting, with Cisco's talk today about the heat waves, and all the different things that are going on, those are all, and what the NOAA weather is doing as well, it's going to be a really important overlay in aquaculture success.

CHAIR FELLER: Richard?

MR. YAMADA: This is a very interesting document. It educated me to the progress we have done in thinking about aquaculture.

So when I was reading this document, everything combated things in my mind that was negatives about aquaculture, like this whole thing about mixing with wild stocks, and creating sterilization. You had things with disease control, their waste, their location, genetic adaptation.

So this is very -- you know, it made me

a believer of aquaculture all of a sudden.

But there's one thing that's sort of haunting me in the back was this, especially in Alaska, there is a big pushback regarding GMO and nowhere in this document did I get a feeling that we were going to address the issues of GMO.

There is an answer to GMO. I mean, you know, where everything else was kind of like: Okay, yes, it's great, it kind of answered all these things that I had in my mind.

But GMO was never brought up. The impact, we are looking at, in Alaska we use it in the presses a Frankenstein fish, you know. And the negative press you get about that. And that's a big hurdle to kind of overcome.

So I wonder if the Committee has talked about it or addressed it.

MR. BELLE: Yes. I think the place it was most likely to show up was actually in the nutrition section. Because the nutrition section isn't completed.

But the issue you are talking about is a different issue, which is what are the environmental implications of growing genetically

modified animals and the Committee really didn't talk about that very much. So I think that's a great suggestion, Richard, and we should go back to the Committee and ask for some guidance on that.

Because I think you raise a really good point. We did not deal with that at all, and I suspect the reason we didn't is, from the mainstream industry perspective, nobody wants to go anywhere near it.

So, you know, I think fair enough, we should maybe raise it and ask how we would build that into some sort of a research plan from an environmental impact point of view. I think that's a good point.

CHAIR FELLER: Yes. I would also note, like under the Social Science Discipline section, it talks about countering negative perceptions, and that's one you could pretty fairly expect, I think. And you would want to have some probably good science to respond to.

Richard, are you done? Have you got another question?

MR. YAMADA: (Shaking head)

CHAIR FELLER: Okay. Mike.

MR. OKONIEWSKI: I might wander in of a dumb-question category here, but I don't know much about aquaculture, even though we do it.

But I guess in this document we put together here -- this might be for Sebastian, or maybe you, Megan -- but would this context, in your experience, put us in a competitive place with the rest of the world aquaculture going on; or do you see anything here that would make us uncompetitive, or would we be doing something special that we would get the extra value out of this if -- in the section on pathology or something.

Is there something in there that, if I went back to my guys and said: They want to do this, that they would have some kind of animated objection to? Or is there anything in here that I need to be aware of in that category?

MR. BELLE: Okay. This is -- don't hold me to this -- no, I am only kidding.

I don't think there are any parts of this that your guys would say, whoa, wait a minute, we don't think that's a priority.

I do think -- and I will get the same thing from my guys and gals, frankly -- there will be a reaction from the producer side that we are focusing on a lot of stuff that we shouldn't necessarily have to focus on, because it's about addressing public concerns, and we are focused on production and not public concerns.

But I think the reality, when you are working in a public space, you have got to deal with those concerns. And frankly, I would argue with my folks that we have a responsibility to address some of those concerns.

So there may be some places in there, Mike, that they will look at it and go: Why the hell are you looking at that? And I think that the simple short answer is we have to if we are going to continue to have a social license to farm.

MR. OKONIEWSKI: I can understand that. Thank you.

CHAIR FELLER: Jim?

MR. PARSONS: Mike, having been on your aquaculture operations and knowing a lot about them, I don't think your guys would have any

problems with this. In fact a lot of what's in here, they are actually doing. So --

MR. OKONIEWSKI: Yes. I suspected as much but I wanted to get some expert opinion, because I'm not even a novice in this category.

CHAIR FELLER: Mike, you are done? You don't have another question? Awesome.

Sara.

MS. McDONALD: Forgive me. I am even worse than a novice in this.

I was just wondering if there is anything -- I wasn't able to find on the source of the stock. So the source of the brood stock and if there is going to be anything that addresses that.

MR. BELLE: Yes. So the genetic section doesn't, I think, overtly articulate that issue; risks of escapes to wild stocks. And so that's where that would come in, I think, and the debate about what's your foundation stock and how you use selection, and all that kind of stuff I think will go into that area.

CHAIR FELLER: Is your raised hand versus your tent card indicating you have a

question, Peter. Peter, do you have a question?

MR. MOORE: I'm going to use the mic. Peter Moore.

The one question I have in here and it's about permitting and lease tenure. And to Mike's point yesterday that it costs two million dollars for them to get, I don't know, whatever, it was a lot of money.

And I think that one of the, whether it's commercial fishing or recreational docks, you have got to consider this to be a business.

So how, where in this document is the point that there needs to be some certainty for the business aspect of this?

But I may have missed it, but I think it's a really important piece.

MS. LOVETT: May I?

CHAIR FELLER: Go ahead.

MS. LOVETT: So this is a very -- this is looking at it from the science perspective, what are the science needs to help industry. So it's not a policy document in that respect, but it's prioritizing what kind of science needs there might be.

Internally, within Fisheries, the regulatory side is also addressing what science do they need to help move the regulatory process along, or improve the process. So they are going to be providing input on that.

But that wasn't the question that was put to the ATF. Does that help?

MR. MOORE: Are we going to get to that discussion at some point at MAFAC?

MS. LOVETT: The full science plan, when it is drafted, will be coming to MAFAC and other external groups for review.

So you will see in it at that time a meshing of all the various science, science and research needs, that either the regulatory arm of our agency, or the science side of our agency and industry -- and I shouldn't say just the agency -- it's industry and the agency -- need to help move aquaculture forward.

So it will contain science and research activities that will support both the regulatory process and the pure research process.

CHAIR FELLER: I think Jennifer is going to bring us some clarity, too.

MS. LUKENS: Peter, I think what you were -- over here -- I think more what you are looking at was in terms of what Paul was talking about yesterday in terms of permitting and what they are doing in the interagency environment.

So certainly, given the fact that this administration is very interested in this, and pushing this forward, and getting through what those, helping industry navigate through the permitting framework that currently exists. I would suspect that we would be having regular updates at MAFAC meetings on the progress to inform you all on that.

CHAIR FELLER: Megan, sorry.

MS. MEGAN DAVIS: So, one of the things that you will see in this, Peter and others, is we did address it from a cost aspect. Because we are looking at that as one of the investors' costs.

And so, and not only cost cash, but with time; and then the availability of being able to have a lower cost and time on it will give us a production unit that's more available to the consumer at a lower cost.

So we address it from that angle.

CHAIR FELLER: Mike?

MR. OKONIEWSKI: Well, to Peter's point, it was two million dollars and it was, as it turned out -- we started out with an expansion project. We ended up with almost a suicide mission of whether we were going to shut down our operations and barely rescued them, thanks to some plant employees, that did some really good testimony at the last minute to the right people.

All the lawyers, geologists, biologists, ecologists and everybody else we hired didn't do the job, but the plant employees seemed to get it across. And that was a four-year process of getting a permit renewed, basically.

So all I am saying is on this, is that you are addressing some of the symptoms, I think, but there is a fundamental problem here that, as far as getting this permitting process going -- and I don't know that this is the place to address it, but we will certainly should be addressing it somewhere.

CHAIR FELLER: Right now is not the

place to address it. But I think definitely the issue is heard and we need to think about it in the future.

MR. OKONIEWSKI: I'm not saying that this is the right forum. I am just saying some place in this process if we are going to achieve anything out of this of recognition, I think you have to address that issue. Months of people are going to be making the investments.

CHAIR FELLER: Sebastian, last comment?

MR. BELLE: Yes. I do think this issue is going to come out in the Social Science section of the science piece as well, even though it's not articulated overtly in there.

Certainly at the ATF discussions, we talked specifically about this issue and the challenge from a permitting point of view.

So I think in both the social science and probably the economics is where, from a research point of view, this issue is going to come up.

My personal opinion is that the research may help solve some of this problem but it ain't going to solve it and it's really, I

would agree with Peter that I hope that MAFAC hears back regularly from the administrators in terms of where they are headed here and how it relates to some of the pending legislation in the Senate and the House.

Because those pending pieces of legislation may actually solve some of these problems. And it would be nice to know, kind of, where the Agency's position is on it and understand what, if anything, members of MAFAC can do to support where they are headed, or adjust where they are headed if need be.

CHAIR FELLER: We are just trying to figure out how to move forward.

So I think -- we have got this document in front of us which is, you know, a vision for looking at this, you know, a broad cross section of science needs related to aquaculture addressing some really core questions, right?

So I think the first question is moving forward on this and do -- you know, on this document itself, and so is this a document that this group feels comfortable considering?

Is there a motion to approve it and say

to the task force: Go forth and do this?

And then the second question, which we will deal with in a second, is clearly there are other issues that have kind of come up in terms of siting and permitting regulatory decisions that MAFAC will need to -- that there is definitely an appetite to tackle those in the future, and so we should be incorporating those into future MAFAC agendas, if we can get on that.

So the question at hand is really about this document. So is there a motion?

MR. YAMADA: I move that we adopt the intent and would -- obviously future revisions to be made by the Subcommittee, and approve moving forward with this document.

CHAIR FELLER: Do I have a second? I need a second first. Is there a second?

Mike? Fight for it. Matt. We will give it to Matt.

All right. Any discussion? None? Mike?

MR. OKONIEWSKI: Yes. I think I would like to -- as you expressed it there -- just make mention of that I object our final statement that

comes out of here, that there are other aspects of this that do need to be looked at and MAFAC will take a crack at it later, or that's what I am hearing. So --

CHAIR FELLER: Joe?

MR. SCHUMACHER: Just I want to make the point, it kind of leads into what, the discussion that Mike was having as well.

In the scientific discipline ecology, oceanography, and marine spatial analysis, I encourage the group to look at land use conflicts as well. It's not just marine use conflicts. Thank you.

CHAIR FELLER: That's a good comment. Sebastian, do you have anything you wanted to say?

MR. SCHUMACHER: No. I think that's a good suggestion as well.

I am -- move the question.

CHAIR FELLER: All in favor signify by saying aye. Anybody opposed? All right. We did that.

Nice work, people. I think that concludes our Commerce Committee business. Okay,

cool.

(Approved unanimously.)

CHAIR FELLER: So we are going to move on to a report from the Recreational Fisheries Subcommittee. Sure, go ahead.

MR. UPTON: We also need to prove Task Two. We talked about that yesterday, the communications. I can speak to it really briefly. Is that okay? Or did we already argue that yesterday.

MS. LUKENS: I think, Matt, earlier when we said we agreed to, MAFAC didn't want to have to agree on Task Two today, that there was still Roger's comments this morning about there is still a lot more discussion that needs to go on at the Commerce Subcommittee; and that MAFAC agreed earlier that they are okay with not formally endorsing it now, but that's a living document and continue to have more discussions on that.

That's what I heard this morning. That would include Task Two, that you are okay to continue moving forward.

Is everybody, is that the reflection of

the conversation this morning?

CHAIR FELLER: That was the thumbs-up.

MS. LUKENS: That was the thumbs-up we did.

CHAIR FELLER: That's an entirely new piece of parliamentary procedure that I invented.

So, Richard, Recreational Subcommittee?

MR. YAMADA: Yes. There is no real decisions that need to be made, or brought in front of the MAFAC Committee, and this Committee, because we are still working on our work plan.

Basically, the Recreational Committee identified two major areas that we are going to be investigating.

One is going to be electronic reporting, basically doing a kind of broad survey across the country of electronic reporting, getting a handle on the different types of programs out there, and doing some kind of evaluation of that and reporting our findings to help other programs that that want to develop electronic reporting programs back to the Secretary.

The second project is trying to

identify the universe of offshore anglers.

And so from the work plan that you see that we distributed, we did make a change. We changed the date of some deliverables that were pushing up the final report from July, from January of 2020, to July of 2019, because we narrowed the scope, instead of looking at the program nationwide, we kind of decided the main area we wanted to focus on was the Gulf States and Atlantic Coast.

So the scope got reduced, and so the project, people that were working on that area of the project thought that we could finish the work a lot sooner.

Other than that, that's basically where -- we have several more meetings scheduled, and we have doled out the work for the Committee members.

And we will be having conference calls and reporting back to MAFAC. So --

CHAIR FELLER: Great. Any questions?

MR. JONES: One point of clarification. We narrowed down the scope to the South Atlantic and end of the Gulf.

CHAIR FELLER: Do we need to -- we don't need to do anything about -- no.

If anybody wants to finish work sooner than planned, that's fine. We will make space for you. Stephanie?

MS. MORELAND: Our conversation with the presentation and reps (inaudible) efforts was cut short because of time that day.

I did have a question that may relate to the work plan here. And I'm not sure who is providing them direction on priorities and where peer review takes place for all those efforts. They are working with apps; they are working with states; they are working with the commissions, and there is nexus with management at the council.

So where does scientific review or peer review occur?

MR. YAMADA: I'm not quite sure what you are asking.

We are doing a recommendation to the Secretary based upon our findings. And, basically, our findings is going to be doing surveys and material trying to provide a

clearinghouse mechanism and setting up some criteria in how we are going to evaluate these programs.

The goals are basically to look at apps and what's preventing them from, Number One, being used by recreational anglers, private recreational anglers; why won't they use them over a longer period of time, and trying to get some input from current -- the public, or the programs -- to get some heads-up to new app developers, people that want to get into trying to collect some data from the recreational anglers.

So I'm not sure if that process needs any kind of scientific review.

MR. CODY: Richard Cody. There is a process in place right now called certification. And what it is is it's a review, an independent review of the methodology that's proposed to use to use the apps.

So the actual apps themselves are not, you know, physically reviewed, it's the methodology behind the use of the app. So the app is just a vehicle for getting at the

information.

But the survey design that's behind the app would be reviewed using MRIP Certification Review.

MS. MORELAND: This is Stephanie again. I just would request, I guess, as the Committee moves forward with its work, that an app presumably, would be gathering data that fits -- that is filling a need, to answer a scientific question, or to track something for management purpose.

And so moving forward, I would like to better understand how the management authorities, or the people who are going to oversee peer review on however the science is going to be used, plug into the process as well.

MR. JONES: Real quick. Stephanie, I think that's a great point.

And I think one of the buckets of research that we are hoping to focus on that, the electronic reporting, is what are the baseline data that needs to feed in from digital reporting that is actually useful for management purposes.

So that would be one of the components

of the report we produce. And then additionally -- tell me if I'm wrong, Richard -- but part of the MRIP process that they are going through right now -- and including the certification processes occurring with the Gulf states -- is based on peer review recommendations National Academy of Sciences that they are incorporating into this process.

MR. YAMADA: Yes.

CHAIR FELLER: That was Robert Jones. I saw you tried to look and see who was talking.

MR. YAMADA: Yes. The National Academy's review process for the one that was done in 2007 and 2017, both of those feed into recommendations that we have incorporated.

But the actual scientific process, or the review process, is, you know, a stand-alone type of effort that involves the use of, you know, statistical consultants that are independent from NOAA to, you know, review the methodology.

The certification process doesn't pertain directly to the implementation of whether a methodology is used. That's addressed through

another process called transition.

And that involves the calibration and integration that Robert was referring to. But that's independently reviewed also. So there are two steps.

CHAIR FELLER: Great. Any other questions for -- no? Okay.

Thanks for that report. Look forward to seeing what you come up with.

I think now -- oh, the Strategic Planning Subcommittee. I guess that's me.

So we don't really have a program of work to report on. Our discussion was more of a brain-storming session to look at some of the topics that have been in front of MAFAC and see what issues out there -- there is some appetite for the Subcommittee to look at.

And we kind of came up with, I'm going to sort of give you the sort of broad architecture of it. I think what we are looking for from MAFAC is some support to move forward and develop a work plan for the Strategic Planning Subcommittee, because there is about, kind of three difference areas that we might get

into that I think we could probably do a little bit work to flesh out, and then present that back to MAFAC and see if that meets with approval, before we get into it.

We talked a lot about what kinds of recommendations, what kinds of things should we dig into looking at the Secretary stated goal of reducing the U.S. seafood trade deficit.

And we talked a lot about issues related to seafood trade, mitigating impacts of tariffs, better representing U. S. Seafood abroad, thinking about industry representation in kind of the U. S., developing the U.S. position, and sort of thinking holistically about the role that commerce plays within sort of the federal family in terms of addressing these trade issues.

The second area were steps related to increasing production -- particularly focused on data and science-based decision-making and credibility of the science process behind that.

And then the third one was kind of a dovetail with what the Commerce Subcommittee has been working on, looking at restoring customer confidence -- restoring, enhancing, boosting,

reinforcing customer confidence in U.S.-caught seafood.

I am a consumer of U.S.-caught seafood and I have a high degree of confidence in it.

We sort of saw some opportunities with the presentation making recommendations on the Saltonstall-Kennedy Grant Program, and perhaps other areas across where NOAA is making strategic investments that could be, perhaps better focused on priorities that would assist with reducing the U.S. Seafood trade deficit.

So I'm going to stop there and see if I misstated, or any of kind of the broad topics from the Subcommittee discussion.

So trade-enhancing production and consumer confidence, broad topics.

Robert?

MR. JONES: I am just curious. I heard mention, I think specifically, about the Pacific ground fish situation. And the enhanced production is part of that conversation about addressing where there is under-utilization right now in certain fisheries?

CHAIR FELLER: Yes. Right? Mike? I

know that's why you have your card up.

MR. OKONIEWSKI: It is not. But -- but I would like to mention one thing that I think -- and tell me, I guess, if this is appropriate or not -- but I think we heard a -- there were three of us that responded to Cisco's concerns about the cutbacks and spending on surveys and how important they are to the industry.

It would seem that might come under strategic planning. And even though we got the report from Cisco after we had our meeting, I am just wondering if this would be the appropriate -- if we could slip that one in there at the last minute.

I think there is some language out there that perhaps Stephanie and Matt have that might be appropriate for that.

If this is the right venue for it, or if we still have time to do that. And if it meets the consensus opinion of the MAFAC members.

CHAIR FELLER: So that gets to the -- will you turn yours off -- thanks -- that kind of gets to the second part of how I'm thinking about this, what, within the Strategic Planning Budget

and Program Management Subcommittee, what are the things we focus on.

I think where we would look at -- we would want to develop recommendations about bringing the sort of appropriate range of Commerce and NOAA tools to bear on achieving this goal.

And so I think we sort of look at this in terms of investment. And I had the exact same thought, frankly, when Cisco was making his presentation, which is looking at -- particularly in terms of data and science-based decision-making. Science I think is one of the things that NOAA does that supports the U.S. seafood industry -- how do we use cooperative research using fishery data, that kind of thing, in order to help address that.

Kind of both sides of it. I think we may also have opinions about investment in those types of activities. But also how do you incorporate partnerships and platforms of opportunity in terms of addressing how to help science needs.

I think we would await some further

input from the Commerce Subcommittee on addressing some of the consumer confidence issues; but I think we could also look at investment, and looking across grant-making and what are kind of the portfolio of grant-making programs that NOAA, Commerce, others can bring to bear and where there might be some opportunities.

We did have some discussion about capacity-building in fisheries to sort of help people take advantage of these programs and sort of basically get to the point where they don't need so much help anymore.

And then there was also the topic of interagency cooperation with other agencies that are involved with some of these trade discussions.

I'm not telling you right now, I know exactly how we take these things and slice and dice them and how they relate to each other. What I am suggesting is that the Strategic Planning Subcommittee meet offline via conference call and try and flesh this out into a work plan.

And so what I would be looking for today is for you guys to say: Yeah. That sounds

like a great idea, and more importantly for people to raise their hands and say they want to be a part of this, because we have about 75 percent of these topics I'm not an expert on.

Yes. Matt?

MR. UPTON: I was hoping that we would be able to make some statements today, given kind of both what we heard about surveys and also some just general statements about the interagency collaboration. Is that possible?

I am just worried otherwise it becomes a longer process. And we already heard that for the surveys, at least, there is already a planned reduction.

So I think that would be something that we got information on, and it might be responsive for us to think about we want to make some kind of statement about that.

And if people are interested in that, I wrote one up that I could circulate and we could talk about it briefly.

CHAIR FELLER: Heidi, you want to field that one?

MS. LOVETT: It would be -- it is

something -- what happens is that everybody -- you would have to a motion out there, everybody would have to agree to it and vote on it and pass it.

We just don't make a statement. So we have to go through that process.

MR. UPTON: A few of those would --

MR. JONES: Turn your mic on, Matt, please.

MR. UPTON: Matt Upton. So I am just wondering when in the process we would do that, because we heard a bunch of reports. And if we want to make a statement that everyone agrees on, I am happy to do that in terms of emailing it. But I just wanted to know when we would do that in the process.

MS. LUKENS: Well, if you want to do it sooner rather than later, you would have to have everybody do it before we adjourn today. So emailing it, as far as time, it would -- can we put it up on the screen and see if everybody -- I mean it depends on how long it is.

If you can e-mail it to Heidi, we could e-mail it to you.

MS. LOVETT: Yes. I am trying to put it up.

MS. LUKENS: And we could put it up on the screen, so -- but again, I don't know how folks feel about that. It's up to the Committee how they feel about it and if they want to put something out.

And if they did agree upon it, then Heidi would pull together a statement, or the right way to transmit that statement to fisheries and the Secretary.

CHAIR FELLER: Mike, is your comment on this?

MR. OKONIEWSKI: Actually, it goes back to something you said, Erika, and that is speaking to the funding piece. Right now outside funding is almost impossible, I guess in some cases maybe you can do it in kind and stuff; but there is a difficulty there that I think, if they are getting funding cuts, they should be looking at other funding opportunities, be it a review of the process right now of what's legal to help funding, like from industry or the NGOs.

I know they are specifically, I think,

aimed at not influencing outcomes of the surveys, but it might be worth looking at.

This doesn't have to go in this piece, but just as consideration later, if that makes sense to you. Look at some alternate sources of funding for surveys. Thank you.

CHAIR FELLER: I put that on my list. I put it under partnerships.

MS. LUKENS: So while Heidi and Jeanette are working through our IT transferability right now, is there anything else?

CHAIR FELLER: I was doing so well up until that point, you have no idea.

MS. LUKENS: At least it wasn't on the mic.

CHAIR FELLER: Thank God. So we have got a couple statements, that once we got those up there we can review them and have discussion and make a decision about whether those are statements that MAFAC wants to make.

But can we get back to my suggestion about developing a work plan and recruiting members for the Subcommittee to help flesh it

out.

I think what I am sort of looking for is some approval or direction from MAFAC to the Strategic Planning Subcommittee to develop a program of work that kind of gets at some of these areas of recommendations to the Secretary on addressing how NOAA could help with the seafood trade deficit.

Is this a thumbs-up kind of decision? Can we do it that way? Yes.

(Approved unanimously)

CHAIR FELLER: Okay. Awesome. Wow. Thanks, guys.

Can I see a show of hands for who would like to be part of working on this?

Mike, I knew I could count on you.

MS. LUKENS: Stephanie, Kellie, Peter. Matt, Megan.

CHAIR FELLER: Mike, I got you. Don't worry about it. I would have written you down if you hadn't raised your hand.

Peter, I got Peter. I do want to make sure that this is not --

That this is inclusive of both capture

fisheries and aquaculture, because I think these are issues that are sort of irrespective of the source of production of seafood, and more kind of like industry recommendations. So, Jim? All right, cool.

What I will do is I will work with Heidi and work on setting up a conference call and an agenda sometimes in the next month or so and we can start working on it.

Thank you. Okay, now what do we got? Matt, do you want to present your statement?

MR. UPTON: Okay, so -- it's okay, I have my own technology.

Okay, we are back.

CHAIR FELLER: It was going so well.

MR. UPTON: I will read it. Okay. MAFAC is very concerned about NOAA's proposed reduction in the frequency and length of surveys, because their data is critical for managing our fisheries.

Surveys are part of NOAA's core mission and must be prioritized, even when fishing budgetary constraints. MAFAC recommends the Secretary of Commerce identify the resources

necessary to support surveys and whether to potentially expand them in response to recent ocean conditions.

MAFAC recommends that NOAA Fisheries modeling efforts focus on enhancing and optimizing data collection. Modeling should not be promoted as a means to reduce or replace monitoring observation.

After a second, I will briefly speak to it.

SPEAKER: I second it.

MR. UPTON: So we heard a lot of information from Cisco, and then earlier in the week about a few different things.

One, changing ocean conditions, and then also some concerns about surveys being reduced due to some budgetary issues.

I think that surveys basically inform everything that we do, and in my mind, at least, they are the core priority of NOAA, and everything else is secondary.

I think it would be good for us to consider whether or not we want to make a strong statement about that.

I think what can happen is surveys start becoming less of a priority; you kind of like move the baseline.

So the North Pacific, for example, the entire time series is based on five survey vessels. And you go down to three vessels and that kind of becomes the -- the new norm.

So I think that it's worth having this discussion briefly. This is not meant to be an exhaustive motion. We can do some wordsmithing, if necessary, but I really think that we should consider making a statement that you need to have surveys, and just this concept of a necessary reduction in surveys, as like that almost made me fall out of my Chair.

For me that would be like, on the vessel management side, not fixing your engine or your nets and spending money on marketing.

So with that, I will take any questions.

CHAIR FELLER: I've got Robert, then Peter, then Sebastian, then Jennifer.

MR. JONES: I wholeheartedly agree. I am very concerned about the shifting base lines.

And provided that it wouldn't violate any FACA rules, I would suggest maybe a friendly amendment to say we recommend the Secretary of Commerce and the United States Congress identify resources as necessary.

MR. UPTON: Thanks. I am open to that.

CHAIR FELLER: Peter?

MR. MOORE: I also support the motion. I wonder if we need to clarify what we mean by surveys. I know that obviously we all know.

I wonder if you want to specifically say something like Stock Assessment Surveys, or Surveys to Support Stock, whatever.

Other than that, and I would agree with Robert's additions.

MR. UPTON: Yes. That sounds good.

CHAIR FELLER: Sebastian?

MR. BELLE: Yes. I absolutely support this. I think this is a really important point. And I think it's great that MAFAC would weigh in on it.

CHAIR FELLER: Jennifer?

MS. LUKENS: I am just giving a point of information here. I'm not weighing in on

this.

I want to reiterate if Cisco was here or Chris was here, just letting you all know that it's unfortunate that terminology of the workshop that Cisco used, so I want to make sure that you all know that stock assessments are certainly a priority, the highest priority, and Chris is constantly talking, speaking internally and externally about the importance of our science and having more resources to be able to do that.

So I just want to make sure that all of you know that it is, in fact, a priority for us. And so just wanted to reiterate that, so you understood that.

MR. UPTON: Thanks. I mean that's -- on the industry side, basically people count vessels. So that's how they look at it.

We hear it's a priority; we hear it's a difficult budgetary environment. But people count vessels and count how much data is out there.

CHAIR FELLER: Mike, and then as Sara, did you have -- no, you are good.

Okay, Mike. Mike and then Richard.

MR. OKONIEWSKI: Jennifer's remarks were a good segue into this, I guess, but I don't for a minute think that it's NOAA Fisheries that's not --

MS. LUKENS: I wasn't saying that.

MR. OKONIEWSKI: -- Right, but it's the people that are providing the funds to make this happen that we are going after.

And sometimes I think when they are slashing this and slashing that, yet they are promoting economic outputs, they don't connect the two dots, sides of the page.

I used to be in that category myself somewhat, many years ago, but I learned a little bit as I went along, and I realize that without good surveys, your economics go to hell, if I can use that expression.

So what they are saying here is vitally important. And I think we need to deliver the message as forcefully as we can.

CHAIR FELLER: Richard?

MR. YAMADA: So I am in support of this action, obviously, but my question is, is this the appropriate committee to do it?

I think we may have more opportunity -- like I think Stephanie mentioned -- to push for industry representation whenever there is an opportunity to discuss budget priorities and any reduction in the survey fleet or -- so I'm not quite sure, you know, if this is the appropriate body to make that recommendation.

Having made the recommendation, is that -- are there -- is the Commerce Secretary's hands tied, where maybe the Secretary could have more authority to mandate industry's represented, you know, and decision bodies that -- so just a technical question, I guess.

CHAIR FELLER: Jennifer, can you clarify that?

MS. LUKENS: Sure. I think I understand what you are trying to get at, which is having more industry input into budgetary decision-making.

So I think that's the purpose of MAFAC, and that's the purpose of all of you sitting around the table is to provide the Secretary of Commerce with your representing who your stakeholders are, and that is what you are doing

right now.

So I think what you are talking about right now, and what you have up on the screen, is exactly what this Committee is meant to do and say and weighing in the appropriate way.

CHAIR FELLER: Megan and then Stephanie and then Kellie.

MS. MEGAN DAVIS: On the last part of the statement here, then the response to recent ocean' conditions, I am just wondering if it needs to have a qualifier, or something that says and whether to potentially expand them in response to recent ocean conditions that are doing X, or --

MR. UPTON: I thought about that. Because I am trying to be sensitive to the people's different thoughts on climate change, so that sounds like a nice way of addressing that, so yes. Changing ocean conditions, yes. I think that's helpful. Thanks.

CHAIR FELLER: Stephanie?

MS. MORELAND: Just in response to some of the questions that Richard asked, it's my understanding that there still would be the

Committee work that you articulated, Erika, on how we make recommendations for broader engagement.

CHAIR FELLER: Kellie?

MS. RALSTON: And I wholeheartedly support this as well. And I think to Richard's point I think it's important for MAFAC to make this statement, but also for individual industries to continue that lobbying effort as well.

CHAIR FELLER: And I don't get to lobby. But -- just two friendly amendments, I think it's a good statement.

I would include something in here, per our discussion yesterday is, you know, noting the importance, that these surveys are a necessary component of stock -- necessary input into stock assessments. Something along those lines.

And what we talked about yesterday was sort of connecting this to a -- sort of the health and sustainability of U.S. fisheries, of the economic activity, I think if the audience is going to be the Secretary, I would kind of include something in there.

MR. UPTON: That sounds good. I was trying to capture that in terms of the critical managing our fisheries, but I think the more you hit on that point, the better. So that makes sense, too.

CHAIR FELLER: Stephanie, you can have a better way to say this than I just did.

MS. MORELAND: Those sentences are in NOAA Fisheries' mission. So if we refer to the mission, it would capture all of them.

CHAIR FELLER: So I am assuming all of you have just not put your cards down. You don't actually have questions.

Mike?

MR. OKONIEWSKI: I think what I heard Richard say, if there was a fleet reduction in surveys -- and I believe that's exactly what they are talking about here -- if I heard you right.

But I think there is another important component that kind of gets forgotten in this.

They do a lot of oceanographic study and if we are having growing eco-system-type models and stuff, you want good data fed into that. And not every survey is the same.

From the ones I have seen, most of them do have a lot of oceanographic work they are checking on as they go. It's not just pure oceanographic -- well, some are, but -- so from those two points alone, I think that you have got that much more reason to continue the program, if not expand them.

CHAIR FELLER: I think those are definitely issues on the table going forward that MAFAC can work on, and we can address them through what the blah-blah Subcommittee is going to do with.

But I think this per pulse presentation yesterday on kind of where we are in the budget process, this is certainly timely, and it's short and sweet and to the point.

So I'm going to call the question on the statement as amended. All in favor? Anybody opposed?

(Approved unanimously)

CHAIR FELLER: All right. Cool. Thanks. I think that concludes our Subcommittee report. So now we just have to -- Oh, my God, we are six minutes ahead of schedule. So now we are

just got our close-out review of decision action items.

I think we have got to talk about dates for our next meeting. So, Heidi, I am just going to lob it to you. I am sure you have a list.

MR. SCHUMACHER: Joe Schumacher. Just a quick question. On these types of motions with statements of this nature, we allow minor editing following, that might follow-up on this before it's put into a letter form. Is that correct?

MS. LUKENS: Yes. Very minor, not changing the content, just editorial tweaks is done, it's part of the process that Heidi takes care of.

MR. SCHUMACHER: Just wanted to be sure. Thank you very much.

MS. LOVETT: This is Heidi. Can everybody see that?

MS. LUKENS: Turn on your mic.

MS. LOVETT: I can make it bigger.

MS. LUKENS: So, Heidi, do you want to walk through these and let's see if folks have any significant issues?

MS. LOVETT: Yes.

MS. LUKENS: And remember, we try our hardest to get you a good date.

MS. LOVETT: Yes. So we looked at some dates that don't conflict with Councils, Commissions, CCC meetings, also avoiding NOAA Fisheries Leadership Council meetings.

These were the dates we saw as being open, although a couple of councils haven't published their dates yet.

So the first one noted is March 20th to the 22nd, and that would follow the North American Seafood Show, if by chance we have the meeting in the New England area, which was one consideration.

March 26th to 28th, is a Tuesday through Thursday, April -- there is different meetings -- and the 22nd, or the 21st is Easter, so sometimes people take a holiday on the Monday right after that.

So it's either Tuesday to Thursday or potentially Wednesday to Friday of that week, depending on people's schedules and school breaks and such.

May, we have two open weeks, 14th to

the 16th, and the 29th to the 31st, I shifted it a day because of that week, the Monday is Memorial Day, so you wouldn't have to travel on Memorial Day.

So I tried to show you the Tuesday to Thursday or Wednesday through Friday for those particular weeks.

I think the major thing is first, if there is anything on here that is a red flag, that something is happening, people can't attend, then let me know. We can take it off the list, and what we could do is a doodle poll so that everybody has an opportunity to weigh in and we will find the best day. Particularly we want to know if there is anything that we could avoid that week, let s us know now.

CHAIR FELLER: Yes, Sebastian?

MR. BELLE: Yes. I want to put a plug in for pulling the first one off. A lot of us have follow-up meetings around the Seafood Show that same week, and we are often with customers, or whatever, and it's kind of a full week. Unless other people feel strongly, that one doesn't make sense a lot of to me.

CHAIR FELLER: Anybody else? Yes? Stephanie?

MS. MORELAND: I have firm conflicts during the April dates, but it's not an industry event, I mean it's not for everybody.

CHAIR FELLER: Robert?

MR. JONES: I guess my only comment would be it seems for us to stretch out to May seems pretty far out for me.

MR. BERKOWITZ: I agree.

MR. JONES: I don't have any conflicts, but I would think we would want to try to get together by March or April at the latest.

CHAIR FELLER: Joe?

MR. SCHUMACHER: I would put a plug in for the last week in March, with that in mind, I would put a plug in for that last week in March 26 through 28th, if that's amenable to folks.

CHAIR FELLER: Richard?

MR. YAMADA: Yes. That's not too good a date for me. Yes, I would prefer another week, but not critical.

CHAIR FELLER: Kellie?

MS. RALSTON: May 14th through 16th is

the National Manufacturer American Voting Congress in D.C. I don't know who else attends that, but I do.

CHAIR FELLER: Is almost St. Patrick's Day a holiday? Anybody else?

MS. LUKENS: So this is really good intel to have here and it's helpful.

It looks like we do have the red flags up there. And Heidi and I will get together.

We were looking at perhaps doing our next meeting in New England, which makes me want to have the May date, because it will be warmer, but I'm not going to use that in the decision-making.

We also are going to check with -- we need to check with folks from fisheries leadership because we would love to have them participate.

So we will put this into the fine art of picking a date.

We also have two folks who weren't here today that Heidi can check in with Bob and Harland to see if they have any hard no's on those dates.

So I appreciate everybody -- Sebastian.

MR. BELLE: Raimundo is not here and I thought he would put a strong plug in for Puerto Rico, too.

MS. LUKENS: He did. That's right. Thank you, Sebastian.

Okay. He did -- and yes. We will -- that is also on the list of things being considered, especially since my boss mentioned that to me so it also --

CHAIR FELLER: There is also a direct flight from D.C. to San Juan.

MS. LUKENS: Okay. Thank you.

CHAIR FELLER: What else?

MS. LUKENS: Heidi, do you have a list of follow-up action items that you want to run through?

MS. LOVETT: So obviously, we have two -- you read two decisions, so we will be creating a transmittal memo that includes the Aquaculture Task Force Report, as well as the motion that just, you all just passed.

Those are the two things we will be transmitting through Chris up the chain.

There is -- I am sorry, I have been doing too many things at once. I don't have a complete list to run through except the various subcommittees are all scheduling meetings.

I know that the -- again, I need a moment. I am sorry.

MS. LUKENS: That's okay. Why don't we, we can always -- we will follow up with you all if there is any big action, I know that's a lot for you to be going through everything.

But that's all that I had as far as immediate actions for you all.

I don't know if -- so we have got time to take a break while Heidi can pull stuff together, or would you all rather just adjourn and we will get back to you by e-mail.

MR. SCHUMACHER: I support adjourning. I trust her implicitly.

MR. JONES: I just want to make a quick statement about how much we appreciate all the work that you guys do. I know you got thrown a curve ball with the hotel bill, you handled it like pros.

And it's gone smoothly and I really

appreciate all the work you guys put in to make this easy for us. (Applause.)

MS. LUKENS: Thank you, Robert. I thank you for saying that. I really appreciate that. And they do; it's not me. It's those two there, and the rest of the folks and Laurel particularly helping out with the session yesterday, I appreciate that. And you don't see how much goes into the meeting planning for this and supporting the subcommittees. So thank you, I appreciate you flagging that.

There is one person who isn't here that I want to recognize, which is Nerie Canasa, and she is the one that does all of your travel.

She is one of the most amazing travel preparers I have ever met in all of federal government, and we are so incredibly lucky to have her. I have had some doozies helping with the travel and she is amazing.

So next time things don't go wrong and she fixes it for you, she would really appreciate a thank you note if you would like to be able to do that.

I wanted to flag that there. Heidi?

MS. LOVETT: So on that note, it is -- and I know new people, I did do a training or an introduction to you all about process, so as a reminder, I usually send out a form that's just a courtesy form to help you pull your travel receipts together.

The most important thing is your hotel bill, generally, because that's your highest cost. We do need a copy of that. You can e-mail it to Nerie.

We like receipts, if possible, to be sent in within five days, within five days, at most two weeks, and you will get your money back really quickly.

It's also really important that when we send out the information about the upcoming meeting, which is usually about two months prior to your meeting, that you at least make your flight reservations, even if it may change -- there are actually two levels of prices. It helps us and it will help you to get better -- the preferred flights for you.

If you make those reservations, both at the hotel and at the -- through the SATO for your

train or your plane, because it gets more complicated and more difficult to then process if too many people are doing it at the last minute, essentially.

Because Nerie handles the travel for the whole front office, all the directors as well, so she handles the travel for a lot of people.

So we really appreciate your help with the timeliness of those things. Thank you.

MS. LUKENS: I have one more thing, sorry. As far as housekeeping, I just wanted to remind everybody if there is a subcommittee of which your interest has been piqued over all the conversations, please let Heidi know if you are interested in being a formal member of a Subcommittee if you aren't already.

Also I have received several names for a Vice Chair, that's my last call for getting names if anyone is interested.

I will be meeting with what I call the F Suite, which is our four principals, and providing them with those names and the recommendation, hopefully soon so we can get an a

Vice Chair identified.

So I think that's all the rest of the housekeeping items I have.

CHAIR FELLER: Thanks, you guys. I really appreciate everybody's participation this week. This is a really fun job and I feel really blessed to get to work with all of you.

And I can't tell you enough how much I appreciate sort of the collegiality and respect, and humor, frankly, that everybody's brought to the table. It's much appreciated and I look forward to working with you more.

Oh, God, Joe, what?

MR. SCHUMACHER: Well, Madame Chair, I just want to thank you for herding us chickens, and I would like to move to adjourn.

CHAIR FELLER: Seconded. Let's go.

(Whereupon, at 11:38 a.m., the PROCEEDINGS were adjourned.)

* * * * *CERTIFICATE OF NOTARY PUBLIC

COMMONWEALTH OF VIRGINIA

I, Carleton J. Anderson, III, notary public in and for the Commonwealth of Virginia, do hereby certify that the forgoing PROCEEDING was duly recorded and thereafter reduced to print under my direction; that the witnesses were sworn to tell the truth under penalty of perjury; that said transcript is a true record of the testimony given by witnesses; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this proceeding was called; and, furthermore, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

(Signature and Seal on File)

Notary Public, in and for the Commonwealth of Virginia

My Commission Expires: November 30, 2020

Notary Public Number 351998